

REMARKS

Claims 1-20 are pending. By this Amendment, claims 1, 5 and 20 are amended. Support for the amendments to claims 1 and 20 can be found at least at original claim 5, for example. No new matter is added.

Applicants thank Examiners Zhu and Poon for the courtesies extended to Applicants' representatives, Mr. Daniel Tucker and Ms. Tiffany Brooks during the March 20, 2008 personal interview. The substance of the personal interview is incorporated into the remarks below.

The Office Action rejects claims 1-5, 7-9, 14-17 and 19-20 under 35 U.S.C. §103(a) as being unpatentable over Castelli et al. (U.S. Patent No. 5,748,221) in view of Nakamura et al. (U.S. Patent No. 5,333,010); claims 10-13 under 35 U.S.C. §103(a) as being unpatentable over Castelli and Nakamura in view of Official Notice; and claims 16-18 under 35 U.S.C. §103(a) as being unpatentable over Castelli and Nakamura in view of Uchida et al. (U.S. Patent No. 4,816,844). These rejections are respectfully traversed.

I. Obtaining a Degree of Color Misregistration Based on Known Dimensions of the Registration Patch and an Amount of Color Shift Between the Detected Color Value and the Combined Color Value

Applicants respectfully submit that Nakamura, Castelli and Uchida, either alone or in combination, do not disclose or suggest at least obtaining a degree of color misregistration based on known dimensions of the registration patch and an amount of color shift between the detected color value and the combined color value, as recited in independent claim 1 and similarly recited in claim 17 and independent claim 20.

Regarding Castelli, the Office Action asserts that "the system needs to be aware of the dimension of the patch so that it may know the range to properly direct the scanning ..." (page 5). However, Applicants assert that the Office Action's assertion that a system is simply aware of the dimensions of the patch does not disclose or suggest obtaining a degree

of color misregistration based on known dimensions of the registration patch. Further, as discussed in multiple personal interviews, Castelli merely incorporates the MOB sensor of De Jong which detects if misregistration has occurred by comparing positional relationships of timing patterns caused by various color marks. However, this method merely senses the position of each mark, and has nothing to do with dimensions of a registration patch.

Still further, the Office Action asserts that Castelli discloses obtaining a degree of color misregistration based on the calculated or selected color value, but admits that Castelli does not disclose such a process based on the combined color value. Accordingly, Applicants respectfully submit that Castelli does not disclose or suggest obtaining a degree of color misregistration based on an amount of color shift between the detected color value and the combined color value.

Nakamura does not make up for the above-noted deficiencies of Castelli. Specifically, Nakamura does not disclose or suggest obtaining a degree of color misregistration based on known dimensions of the registration patch. In fact, Nakamura does not even disclose a registration patch, but instead discloses an electronic endoscope system that takes pictures of lesions in a living body. See col. 1, lines 12-24. However, Nakamura also does not disclose or suggest obtaining a degree of color misregistration based on known dimensions of an image taken by the electronic endoscope.

The Office Action asserts that Nakamura discloses obtaining a degree of color misregistration based on an amount of color shift between a detected color value and a combined color value. In particular, the Office Action asserts that R and B are the detected color values and Y is the combined color value. Further, the Office Action asserts that Nakamura discloses that color misregistration is detected based on R-Y and B-Y, which determine the magnitude of a correction signal to correct the misregistration. The Office Action cites Fig. 4 and col. 5, lines 3-40 and col. 6, lines 37-47. However, Applicants

respectfully submit that Nakamura does not detect a degree of color misregistration based on a color shift between R and Y or a color shift between B and Y. Instead, Castelli merely discloses determining a correction value based on a difference between a value of R-Y and a value B-Y for various fields. That is Nakamura merely discloses determining a correction value based on a difference between two of what the Office Action alleges to be color shifts for different fields, and not based on the alleged color shifts themselves. See Fig. 4, step S1 and col. 6, lines 54-63.

Uchida does not make up for the above-noted deficiencies of Castelli and Nakamura. In particular, Applicants respectfully submit that Uchida is silent regarding obtaining a degree of color misregistration based on known dimensions of the registration patch and an amount of color shift between the detected color value and the combined color value.

II. The Combination of Castelli and Nakamura is Improper

A. Nakamura and Castelli are Nonanalogous Art

"A reference in a field different from that of Applicant's endeavor may be reasonably pertinent if it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his or her invention as a whole" (MPEP §2141.01(a) I).

Castelli is directed to a colorimetry gloss and registration feedback machine for a color printing device. To measure misregistration, Castelli uses a color misregistration technique incorporating Chevron mark technology and bi-cell detectors such as those disclosed in De Jong. Thus, Castelli measures misregistration (which he defines as an accuracy of the juxtaposition of various individual colors making up a color image, col. 1, lines 49-55). The image in which Castelli is attempting to determine registration errors is a static image that has been printed by a printing machine.

In sharp contrast, Nakamura is directed to detecting and easing color

"misregistration," which is defined in a completely different way that is applicable only to the specific case of the problem that Nakamura is trying to solve, as discussed below.

Specifically, Nakamura defines "misregistration" as a color reproduction error resulting from a difference in time of sampling color information. See col. 2, lines 1-3. Nakamura discloses in detail the causes of this "misregistration" error, which are critical to the proposed method in Nakamura for detecting the "misregistration" error.

For example, Nakamura discloses that in a field sequential type electronic endoscope, a subject is illuminated successively with red, green and blue rays. Then, the image is produced by synthesizing the separate three images to produce a single color image. See col. 1, lines 20-24. However, because the three component color images are produced at different times, a moving image appears with colors that are different from the original colors of the subject. See col. 1, lines 33-39. For example, the endoscope often has a water source on the end to flush off particles that may adhere to the end of the endoscope. However, when the water from the water source crosses the path of the image, a smearing occurs in the image due to the above-described effect.

Further, Nakamura discloses that when viewing a human cell under normal circumstances, the average hue of the entire screen remains nearly stable throughout the entire field. See col. 6, lines 15-18. However, when a water supply is turned on, and water drops are jetted across the viewing section of the endoscope, the water drop causes the hue to change drastically. For example, see Fig. 3, which shows that average hue distance of a screen for a gastric wall with a water supply and a gastric wall without a water supply.

In effect, Nakamura's "misregistration" detection system is merely comparing the hue of various fields of the screen to determine the amount that a hue changes, because as described above, if a water drop crosses the field of vision of the endoscope, the hue will

drastically change. Accordingly, Nakamura is merely comparing hue difference in different fields and relating it directly to "misregistration".

However, Nakamura's detection means hinges on two conditions: 1) the hue of a gastric wall, when not subject to a water supply, remains nearly constant; and 2) when water is supplied to the gastric wall, the sequential imaging of red, green and blue causes the hue of the gastric wall with the water supply to vary rapidly.

The teachings of Nakamura are non-analogous to those of Castelli. As described above, Castelli is directed to detecting whether there are juxtaposition errors in the alignment of various primary color images. *However, Castelli does not disclose that if there are no juxtaposition errors that the hue of the image will be constant, and if there are juxtaposition errors, the hue will change rapidly.* Thus, one of ordinary skill in the art would never have considered incorporating the "misregistration" detecting means of Nakamura into the device in Castelli, because the two are non-analogous art.

**B. The Proposed Combination of Castelli and Nakamura
Renders Castelli Unsatisfactory for its Intended Purpose**

"If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose then there is no suggestion or motivation to make the proposed modification." (MPEP §2143.01 V).

The Office Action asserts that it would have been obvious to use the analysis technique of Nakamura as the time series analysis technique of Castelli to provide a color misregistration easing system capable of easing color misregistration without causing visual unnaturalness. However, the differences between Castelli and Nakamura have been discussed above. In particular, Nakamura relies on the condition that the average hue of an entire screen while viewing a human cell remains nearly stable without a water supply, and becomes very unstable in the presence of a water supply. That is, Nakamura detects the movement of

the water supply across the screen as a change in hue, and thus determines that misregistration has occurred.

However, in the static printed color patches of Castelli, no water supply is present and Castelli does not disclose that the hue remains constant or changes based on whether or not misregistration, as defined by Castelli, has occurred. Thus, incorporating the analysis technique of Nakamura, which is discussed above, would not detect any misregistration as defined by Castelli. That is, the technique used in Nakamura would be completely incapable of detecting an error in the juxtaposition of component toner images in a color image. Accordingly, the system in Castelli would be rendered inoperative and therefore unsatisfactory for its intended purpose.

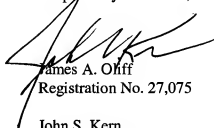
I. Conclusion

In view of the above, the combination of Castelli and Nakamura is improper, and Castelli, Nakamura and Uchida, either alone or in combination, do not disclose or suggest the subject matter recited in the claims. Accordingly, Applicants respectfully submit that claims 1-20 are allowable. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 1-20 under 35 U.S.C. §103(a).

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Date: April 16, 2008

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